

Regarding the rejection of claims 1-6, 11-13, 15, 16, and 20 as unpatentable over Gultekin, Applicants believe that the claims are patentable over the prior art. Claim 1 recites a broadband communication system of the type utilizing xDSL packet based technologies. The system comprises an upstream xDSL modem, a twisted pair connected to the upstream xDSL modem, and a plurality of taps defined along the twisted pair. The system further comprises a plurality of downstream xDSL modems. Each downstream xDSL modem is in communication with a corresponding tap of the plurality of taps. The upstream xDSL modem and the plurality of downstream xDSL modems provide packet based point to multipoint communication between the upstream xDSL modem and the plurality of downstream xDSL modems. That is, claim 1 recites, in combination with other limitations, point to multipoint xDSL communication. The prior art fails to suggest a twisted pair having a plurality of taps for point to multipoint xDSL communication in combination with the other recited limitations.

Gultekin does describe an initialization protocol that supports adaptation of data rates wherein the protocol contains a four phase process executed by a first and second transceiver over a communication link. The Examiner states that Gultekin suggests point to multipoint xDSL communication and directs Applicants' attention to Col. 1, line 29; Col. 5, lines 30-41; Col. 9, line 63-Col. 10, line 3; and Fig. 1. Applicants contend that Gultekin fails to suggest point to multipoint xDSL communication provided over a twisted pair communication link having a plurality of taps defined along the twisted pair.

Figure 1 is clearly point to point communication between TRX1 and TRX2. Col. 1 lines 27-29 describes an xDSL transceiver pair interconnected via a communication link. Col. 5, lines 30-41 describes communication between two ADSL modems, TRX1 and TRX2. And lastly, Col. 9, line 63-Col. 10, line 3 also fails to suggest point to multipoint xDSL communication. Col. 9, lines 63-67 does describe that two transceivers may negotiate a bidirectional data rate in an ADSL system. This section further states "or a unidirectional data rate (as in an HFC network for instance) wherein data are downstream broadcasted over a point to multipoint connection but where an upstream transmission is done over a point to point channel whose data rate may be negotiated during initialization." This specific portion

of Gultekin does mention point to multipoint connections, but it is describing a hybrid fiber coax (HFC) network and not made in reference to an xDSL system provided over a twisted pair communication link having a plurality of taps defined along the twisted pair. There is no suggestion that the point to multipoint connection described for use with an HFC network is usable with an xDSL system, nor is there suggestion or motivation in the reference to do so.

Additionally, the Examiner notes that Gultekin does not explicitly teach the tap, but provides an interface (tap) for each downstream xDSL modem, and communications between each xDSL modem and its corresponding interface for the point to multipoint communications are inherently required, because the line is shared by the plurality of downstream xDSL modems connected to the twisted pair copper telephone line. However, Gultekin does not teach point to multipoint communication over a twisted pair copper telephone line, but only describes, by example, use of a hybrid fiber coax as previously explained.

Applicants point out that Gultekin is an initialization protocol for adaptive data rates, and involves a pair of transceivers negotiating a data rate for future transmissions over a communication link between the pair of transceivers. There is no suggestion to add point to multipoint capabilities to the ADSL system of Gultekin, and there is no suggestion that the initialization protocol for adaptive data rates of Gultekin would even be usable in such a system. This tends to further support the fact that there is no motivation to modify Gultekin to achieve the claimed invention as recited by claim 1.

For reasons given, Gultekin fails to suggest the specific combination recited by claim 1. The copper pair in Gultekin is used in point to point ADSL and there is no teaching of point to multipoint over a twisted pair as claimed. The only point to multipoint in Gultekin is in an HFC network. Claims 12 and 15 are independent claims that are believed to be patentable for similar reasons as given above with respect to claim 1. More specifically, claims 12 and 15 each recite, in combination with other limitations, providing packet based point to multipoint communication between the upstream xDSL modem and the plurality of downstream xDSL modems over a twisted pair communication link having a plurality of taps

defined along the twisted pair. Claims 2-5, 11, 13, 16, and 20 are dependent claims and are also believed to be patentable.

Regarding the rejection of claims 9, 10, 14, 19, and 20 as being unpatentable over Gultekin et al in view of Kaku et al, these claims are dependent claims and are believed to be patentable for their dependency. Further, Kaku et al discloses a multipoint type modem communication system connected over a telephone line having a training means and a reduced training time. There is no suggestion of a twisted pair connected to xDSL modems for providing packet-based point to multipoint communication. There is no suggestion or motivation within the two references to combine or modify the disclosed features to show support or explanation of a point to multipoint xDSL communication provided over a twisted pair communication link having a plurality of taps defined along the twisted pair.

Regarding the rejection of claims 7-8 and 17-18 as being unpatentable over Gultekin and Kaku in view of Henderson, these claims are dependent claims and are also believed to be patentable for their dependency.

For the reasons given above, claims 1-21 are believed to be in condition for allowance and such action is respectfully requested.

Respectfully submitted,

**BRUCE A. PHILLIPS ET AL.**

By Jeremy J. Curzuri  
Jeremy J. Curzuri  
Reg. No. 42,454  
Attorney for Applicants

Date: April 14, 2003

**BROOKS & KUSHMAN P.C.**  
1000 Town Center, 22nd Floor  
Southfield, MI 48075  
Phone: 248-358-4400  
Fax: 248-358-3351